Technical Symposium

Scientific Basis of Modeling for the SJV 2012 PM2.5 Plan

San Joaquin Valley Air District
California Air Resources Board

April 27, 2012

Agenda

- Introductions and Opening Remarks
- Overview of PM2.5 Plan Development
- Nature of PM2.5 in the San Joaquin Valley
- Review of Modeling Results from CRPAQS
- Modeling for SIP Purposes
- Technical Approach for 2012 SJV PM2.5 Plan Modeling
- Question and Answer Session
  - During this workshop, webcast participants can email questions to: webcast@valleyair.org

Overview of PM2.5 Plan Development

Jessica Fierro, Plan Development Supervisor
San Joaquin Valley Air District

Introduction to the *2012 PM2.5 Plan*

- Plan for addressing EPA's 24-hour PM2.5 standard of 35 µg/m³, as set in 2006
- Plan goals:
  - Meet federal requirements
  - Assure expeditious attainment of the standard
  - Evaluate the benefits of the significant emissions reductions that will be achieved between now and 2019 under current regulations
  - Put together the strongest plan possible, with the strongest feasible control measures

SJV PM2.5 Plan Schedule

Plan for addressing EPA's 24-hour PM2.5 standard of 35 µg/m³, as set in 2006:

- Ongoing: Scientific research, technical analyses, outreach
- April: First round of public workshops
  - April 27: District/ARB Technical Symposium on the Scientific Basis of PM2.5 Plan Modeling
  - April 30: District workshop on general plan direction
- June & August: revised drafts, workshops
- October 2012: District plan adoption
- November 2012: ARB plan adoption
- December 14, 2012: Plan due to EPA

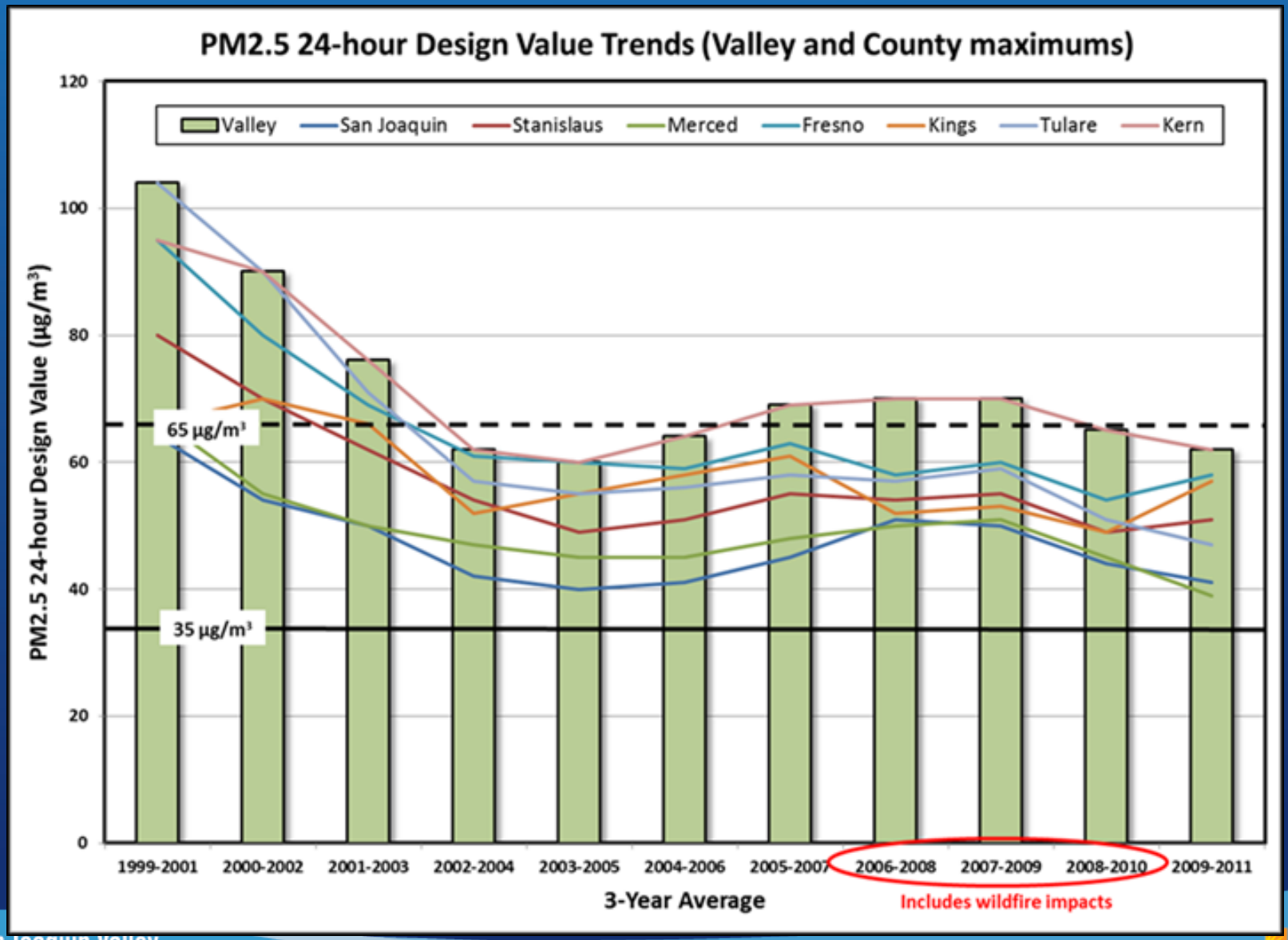
Plan Requirements

- **Analysis of PM2.5 concentrations**
- **Emissions inventories**
- **Photochemical modeling and Weight of Evidence analyze future air quality and identify emission reduction for attainment**
- Emission control strategies
- Transportation conformity budgets
- Reasonable Further Progress demonstration
- Contingency measures

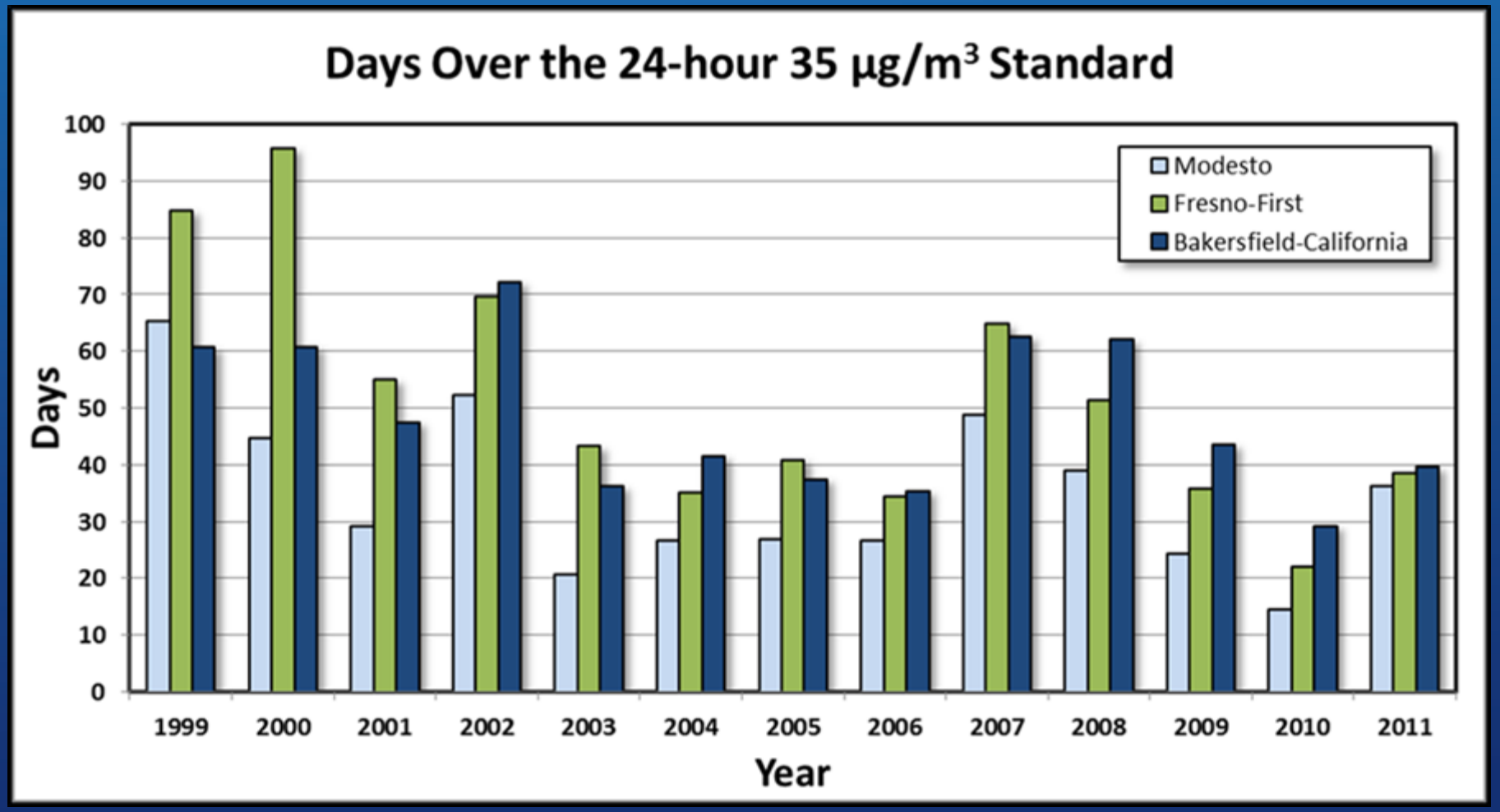
The Valley's PM2.5 Air Quality

- Evaluating multiple parameters provides broader picture of air quality progress
  - "Design values:" the attainment test; 3-year averages following EPA protocols
  - "Exceedances days" (24-hr average greater than 35 µg/m³)
  - Air Quality Index (AQI) Trends
  - Concentrations by hour, day, and season
- Speciated data to determine types of PM contributing to total concentrations

The Valley's PM2.5 Air Quality



The Valley's PM2.5 Air Quality



Emissions Inventory

- Best available estimates of the amount of pollutants and precursors being emitted from each source type
- Inventories continuously improved
- Plan's inventory is a snapshot reflecting best information at the time for use in modeling & control measures evaluation
- District coordinating closely with ARB to ensure accuracy

Improvements to Base Year Emission Inventory

- Point source emissions are based on District reports for 2007
- Mobile source emission estimates reflect all adopted ARB rules and the latest activity assumptions
- Key stationary and area source categories reflect economic recession, newer activity data, and/or updated emission factors

Emission Inventory Forecasts

- Forecasts to future years are essential in demonstrating attainment and maintenance of the air quality standards
- The key components are:
  - Base Year Inventory – the best estimate of current emissions
  - Growth Factors – an estimate of the annual growth or decline in the activity for each source category
  - Control Factors – an estimate of the emission reductions from adopted rules and regulations targeting specific source categories